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Cycleryon wulfi n. sp.
(Crustacea: Decapoda: Eryonidae) from the Upper
Jurassic of Eichstätt (Bavaria, S Germany)

Abstract - We report here the presence of an eryonid decapod crustacean from the Upper Jurassic (Tithonian) of Blumenberg quarry, located close to the city of Eichstätt (Bavaria, S Germany), *Cycleryon wulfi* n. sp. (infraorder Palinura Latreille, 1803, family Eryonidae De Haan, 1841). It is the fourth species of this genus reported from the Upper Jurassic lithographic limestones of southern Germany.

Key words: Crustacea, Decapoda, Jurassic, Germany.

Riassunto - *Cycleryon wulfi* n.sp. (Crustacea: Decapoda: Eryonidae) del Giurassico superiore di Eichstätt (S Germania).

Segnaliamo la presenza di un crostaceo decapode erionide nel Giurassico superiore (Titoniano) della cava di Blumenberg, ubicata vicino alla cittadina di Eichstätt (Baviera, S Germania), *Cycleryon wulfi* n. sp. (infraordine Palinura Latreille, 1803, famiglia Eryonidae De Haan, 1841). Si tratta della quarta specie appartenente a questo genere segnalata nel calcare litografico del Giurassico superiore della Germania meridionale.

Parole chiave: Crustacea, Decapoda, Giurassico, Germania.

Introduction

The lithographic limestones of the Upper Jurassic in southern Germany crop out in a large set of localities of different ages and settings spanning an area of several hundreds of kilometres. The localities in southern Franconia are often summarised as the “Solnhofen Lithographic Limestones”, which are famous for their content of spectacular, well-preserved fossils.

The biostratigraphic framework of the Upper Kimmeridgian (Upper Jurassic) was worked out by one of the authors (Schweigert *et al.*, 1996), but our knowledge of the succession of ammonite faunas from the Lower Tithonian is still in a preliminary stage.

North and east of Eichstätt, in Franconia, several localities with lithographic

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limestones, such as Zandt, have provided numerous well-preserved decapod crustaceans from the basal Tithonian. Some of the species are new. Other decapod faunas similar in age to those of Zandt come from quarries in the vicinity of Eichstätt (e.g. Blumenberg, Schernfeld, Wintershof). The studied specimen comes from Blumenberg quarry, near the locality where the second specimen of *Archaeopteryx lithographica*, today housed in the Museum für Naturkunde der Humboldt-Universität in Berlin, was discovered. Another rare decapod specimen from this locality is the shrimp *Schmelingia wulfi*, recently described by Schweigert (2002).

This contribution is another part of the authors' research on new decapod crustaceans from the Jurassic lithographic limestones of southern Germany (Schweigert & Garassino, 2003 a, b, 2004; Garassino & Schweigert, in press; Garassino *et al.*, in press).

Material

The studied specimen is a moult which is preserved in a thick light-yellow layer of lithographic limestone and flattened on the surface. The soft consistency of the surrounding rock made its preparation easy.

The studied specimen (JME SOS 4932) is housed in the private collection of M. Wulf (Rödelsee, Bavaria, S. Germany).

Acronym. JME: Jura-Museum Eichstätt.

Systematic Palaeontology

Infraorder Palinura Latreille, 1803

Family Eryonidae De Haan, 1841

Genus *Cycleryon* Glaessner, 1965

Type-species: *Cycleryon propinquus* (Schlotheim, 1822)

Cycleryon wulfi n. sp.

Figs. 1-6

Diagnosis: subhexagonal carapace, with weak longitudinal median carina originating from the posterior margin; two weak carinae run subparallel to the median carina; one weak marginal indentation; serrate frontal margin; chela of pereopod I with dactylus bent at the distal extremity and fixed finger gently curved; subtriangular telson; petaloid exopodite without diaeresis.

Etymology: the trivial name alludes to M. Wulf, who gave us the opportunity to study this specimen from his private collection.

Holotype: 9705 Wulf's collection, in property of the Jura-Museum Eichstätt, JME SOS 4932.

Geological age: Solnhofen Group, Upper Eichstätt Formation (Upper Jurassic, Early Tithonian, *Hybonotum* Zone).

Type locality: Blumenberg (Eichstätt).

Occurrence and measurements: we ascribe to this species a single specimen (JME SOS4932), preserved as a part and counterpart.

Body length: 5 cm

Length of carapace: 3 cm

Width of carapace: 4 cm

Length of abdomen: 1.5 cm

Length of propodus of pereopod I: 1.5 cm

Description. Medium-sized eryonid with strongly tuberculate exoskeleton.

Carapace. Subhexagonal carapace, wider than long, narrowing posteriorly. Serrate frontal margin bearing small spines and delimited laterally by two strong spines. One weak marginal indentation. Small and narrow ocular incisions delimited posteriorly with a strong spine. Weak median longitudinal carina, originating from posterior margin and ending in the posterior part of carapace. Two weak carinae extend parallel to median carina, ending in the posterior part of carapace. Lateral margins of carapace with small spines in the posterior, increasing in size in the median and anterior parts. Dorsal surface of carapace densely tuberculate.

Abdomen. Subrectangular somite I smaller than the others. Subrectangular somites II-VI of equal length and with smooth dorsal surface. Pleurae strongly dentate. Somites I-V without a median longitudinal carina. Triangular telson without a median longitudinal carina and with rounded distal extremity. Subsquare protopodite. Subrectangular endopodite without a median longitudinal median carina. Petaloid exopodite without diaeresis and pointed distal extremity at the conjunction between the lower and lateral margins. Dorsal surface of tail fan slightly tuberculate.

Cephalic appendages. Eye with very short eye-stalk. Thin antennular peduncles of which the distal one bears two short multiarticulate flagella of equal length. Short and stout carpocerite of antennal peduncle bearing thin multiarticulate flagellum.

Thoracic appendages. Pereiopod I with strong and elongate propodus. Chela of pereiopod I with dactylus bent at distal extremity, enlarged distal extremity and fixed finger gently curved. Weak carina extends parallel to the outer margin of propodus. Edentate inner margins of dactylus and fixed finger. Dactylus and fixed finger with tuberculate dorsal surface in the proximal part. Pereiopods II-IV not preserved. Pereiopods V with terminal dactylus.

Abdominal appendages. Pleopods are not visible.

Discussion. *Cycleryon* Glaessner, 1965, was previously represented in the lithographic limestones of the Upper Jurassic of S Germany by six species: *C. propinquus* (Schlotheim, 1822), *C. spinimanus* (Germar, 1827), *C. orbiculatus* (Münster, 1839), *C. elongatus* (Münster, 1839), *C. armatus* (v. Knebel, 1907), and *C. subrotundus* (Münster, 1839). Recently, Schweigert (2001) interpreted *C. spinimanus* to be the female of *C. propinquus*. A recent review by Garassino & Schweigert (in press) on the original sample studied by Schlotheim (1820, 1822), Münster (1839), Oppel (1861, 1862), v. Meyer (1836) and v. Knebel (1907), housed in the Museum für Naturkunde der Humboldt-Universität in Berlin, the Bayerische

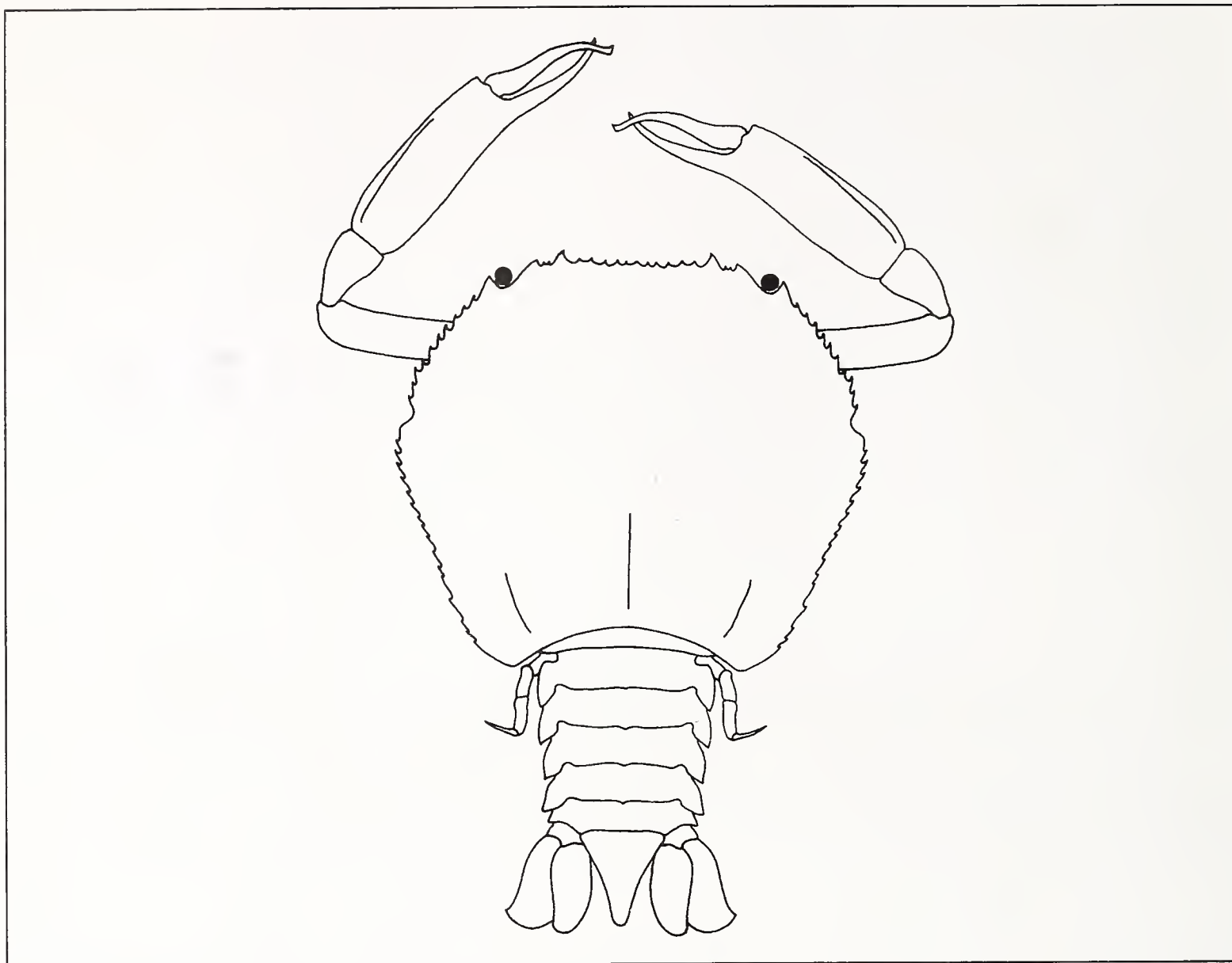


Fig. 1 - *Cycleryon wulfi* n. sp., reconstruction (ricostruzione).

Staatssammlung für Paläontologie und Geologie in Munich and the Natur-Museum Senckenberg in Frankfurt am Main, recognised the systematic validity of *C. orbiculatus* and *C. elongatus*, but considered instead *C. armatus* to be a synonym of *C. orbiculatus*. Even though the poor state of preservation of *C. subrotundus* made a comparison with the other species of *Cycleryon* difficult, we consider this species most probably a juvenile stage of *C. orbiculatus*.

Two unique morphological characters, the serrate frontal margin of carapace and just one weak marginal indentation, distinguish *C. wulfi* n. sp. from the other known species of *Cycleryon*.

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Fig. 2 - *Cycleryon wulfi* n. sp., holotype, n. cat. JME SOS 4932 (Wulf's collection, n. 9705) (x 2).
Fig. 2 - *Cycleryon wulfi* n. sp., olotipo, n. cat. JME SOS 4932 (collezione Wulf, n. 9705) (x 2).



Fig. 3 - *Cycleryon wulfi* n. sp., serrate frontal margin (margine frontale dentato) (x 2).



Fig. 4 - *Cycleryon wulfi* n. sp., abdomen (addome) (x 2).



Fig. 5 - *Cycleryon wulfi* n. sp., pereiopod I (pereiopode I) (x 2).



Fig. 6 - *Cycleryon wulfi* n. sp., tail fan (ventaglio caudale) (x 2).

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